

REMARKS

In response to the Official Office Action dated April 22, 2004, claims 1, 2, 6, 11, 15, 16, 17, 21, 23, 27, 28, 32, and 34 have been amended. Claim 10 has been cancelled. It is believed that the amended claims are allowable over the prior art made of record by the Examiner and re-examination of this application is therefore respectfully requested.

The invention relates to a closed loop power control method implemented by a mobile station to control the transmit power of a base station. The base station transmits signals to the mobile station in frames. Each frame is divided into a number of logical transmission units (LTUs). The closed loop power control method includes an outer loop control element and an inner loop control element. The outer loop control element monitors the frame error rate (FER) and adjusts a set point to maintain a desired FER, e.g., one percent. The set point, for example, comprises a bit energy-to-noise ratio. The inner loop control element compares the bit energy-to-noise ratio of the received signal to the set point and generates up/down commands based on the comparison. If the measured bit energy-to-noise ratio exceeds the threshold, the mobile station transmits a down command to the base station, instructing the base station to reduce its transmit power. Conversely, if the measured bit energy-to-noise ratio is less than the set point, the mobile station transmits an up command to the base station, instructing the base station to increase its transmit power.

According to one embodiment of the present invention, the outer loop power control element increases the set point used by the inner loop control element by a variable amount, depending upon the number of LUT errors. In prior art systems, the step size for adjustments in the set point are fixed. In a second embodiment of the invention, the LUT error rate is used by the outer loop control element in place of the frame error rate to adjust the set point.

Claim 1 recites "adjusting a transmit power of the base station using a measure of logical transmission unit (LUT) errors in a received signal transmitted from the base station." The prior

art cited by the Examiner does not teach or suggest using logical transmission units for purposes of power control.

The patent to Chen discloses a method of closed loop power control in which a measure of the FER is used to adjust a set point for an inner loop power control mechanism. There is no teaching or suggestion in Chen to use a measure of LTU errors for power control. To make up for the deficiency of the Chen reference, the Examiner relies on a modification of Chen based on the patent to Chang *et al.* However, the prior art is devoid of any suggestion or motivation to make the combination.

The patent to Chang *et al.* simply discloses that LTUs are known. The patent to Chang *et al.* discloses a new method of arranging the CRC bits for a plurality of LTUs in a single frame. However, there is no teaching or suggestion in Chang *et al.* to use LTUs for power control. Since the problem addressed in Chen is unrelated to power control, and there is no suggestion in either reference of using LTUs for power control, the suggestion or motivation to combine the two references is missing. Accordingly, it is believed that claim 1 is allowable over the prior art made of record.

Independent claims 16 and 27 are apparatus claims and also include the limitation of "using a measure of logical transmission unit (LTU) errors" to adjust a base station transmit power. Accordingly, it is believed that claims 16 and 27 are allowable for the same reason and claim 1.

The Examiner will note that the original application included two independent method claims, claims 1 and 10. Claim 1 has been amended to provide a single independent method claim covering both embodiments of the invention disclosed in the patent specification. Minor amendments have been made in other claims to conform to new independent claim 1, or to correct the errors noted by the Examiner in the Office Action.

Also, the Examiner's objection to the drawings is noted. Proposed corrections to the drawings are attached hereto.

In light of the foregoing, it is believed that the present application is in condition for allowance and notice to such effect is respectfully requested.

Respectfully submitted,

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A handwritten signature in black ink, appearing to read "David E. Bennett", is written over a horizontal line.

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Dated: August 23, 2004

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